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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/584,277	06/23/2006	Kazunari Kobayashi	292950US0PCT	4084

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EXAMINER	
MARKS, JACOB B	

ART UNIT	PAPER NUMBER
1729	

NOTIFICATION DATE	DELIVERY MODE
04/29/2011	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/584,277	KOBAYASHI ET AL.	
	Examiner	Art Unit	
	Jacob Marks	1729	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *RCE filed 07-19-2010*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5 and 7-16* is/are pending in the application.

4a) Of the above claim(s) *4, 5, and 7-16* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *03-14-2011*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 07-19-2010 has been entered.

Claims 1-5 and 7-16 are pending. Claims 7-13 are withdrawn. Claims 14-16 are new and are withdrawn as explained below.

The text of those sections of 35 U.S. Code not included in this action can be found in the previous Office Action issued 03-07-2010.

Election/Restrictions

Newly submitted claims 14-16 are directed to an invention that lacks unity with the invention originally claimed for the following reasons:

Claim 14 lacks unity of invention because the combination of Batey (WO 00/77868), Kainthla et al. (US 5,952,124), Hikata et al. (JP 07-094193) and Kejha et al. (US Pat. Pub. 2004/0018425) recites all of the claim limitations of parent claim 1 as explained below.

Claim 15 lacks unity of invention because it depends from claim 8, which has been previously shown to lack unity of invention from claim 1.

Claim 16 lacks unity of invention because the combination of Batey (WO 00/77868), Kainthla et al. (US 5,952,124), Hikata et al. (JP 07-094193) and Kejha et al. (US Pat. Pub. 2004/0018425) recites all of the claim limitations of claim 1, the only independent claim that is not withdrawn.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 14-16 withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Claim Rejections - 35 USC § 112

Claims 1-3 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Specifically, claim one as amended recites a battery "to which indium is not added." However, applicant discloses on page 5 of applicant's specification that indium may be added. Therefore the originally filed specification and claims do not provide support for a limitation that excludes the addition of indium to the zinc anode.

Claim Rejections - 35 USC § 103

Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Batey (WO 00/77868), in view of Kainthla et al. (US 5,952,124), Hikata et al. (JP 07-094193) and Kejha et al. (US Pat. Pub. 2004/0018425).

Regarding claim 1, Batey et al. teach a method for producing a zinc foil for use as a battery anode comprising: (pg. 1 lines 4-25): forming the compact (plate) of a zinc alloy that contains bismuth wherein the average grain size of the zinc alloy is preferably 10 micrometers before mechanical working (pg. 1 lines 4-25, pg. 10 lines 1-7, pg. 11 lines 22-31). Batey et al. further disclose that the addition of indium is optional as it is one of several additives that may be included in the zinc (pg. 11 lines 20-31). Batey et al. further disclose that the bismuth additive may be present in an amount less than 500 ppm, which is equivalent to 0.15 wt% bismuth (page 12). Batey et al. further disclose that lead can be optionally added but is not required to be added to the formulation (page 12). Batey further disclose that zinc is the main component of the alloy, wherein all other additives are in concentrations of less than 500 ppm (pages 11 and 12).

Batey et al. disclose that the anode foil is for use in an alkaline battery cell. Batey et al. does not disclose that the battery is a manganese battery. However, Kainthla et al. disclose that manganese dioxide cathodes are conventionally used in alkaline battery cells (col. 1 lines 11-16). Therefore, it would have been obvious to one of ordinary skill in the art to use a manganese dioxide cathode in the alkaline cell of Batey et al. because Kainthla et al. disclose that alkaline cells conventionally use manganese cathodes.

Batey et al. does not specifically teach that the mechanical working occurs at a temperature from 120 °C to 210 °C or that the negative electrode is formed into a zinc can container for the battery. However, Hikata et al. teach that forming the negative electrode into an electrode can that serves as a container is conventional for manganese dry cells (par. 2). Hikata et al. further disclose that mechanical working of a zinc alloy containing bismuth that acts as the negative electrode can is performed at a temperature between 180 °C and 220 °C and that this process decreases the chance of cracking or chipping (par. 6, 13, 14).

Batey et al. discloses that the foil is formed by rolling, but does not disclose that a battery can may be formed by extrusion, punching, and deep-drawing (page 1 lines 26-30). However, Kejha et al. disclose a method of forming a prismatic packaging structure (battery can) for an electrochemical cell wherein a tubing 2 is extruded then subsequently capped off by a deep drawn back plug 4 (par. 33, fig. 1-4). Deep drawing inherently contains the step of punching a shape through a drawn material. Kejha et al. further disclose that such a cell is less expensive than typical packaging enclosures for batteries (par. 32). Therefore, it would have been obvious to one having ordinary skill in the art to form the battery of Batey out of the zinc alloy anode of Hikata et al. because such a configuration is conventional for manganese dry batteries. It would have been obvious to one of ordinary skill in the art to use the mechanical working temperature of 180 °C and 220 °C for the zinc alloy anode of Batey because such a mechanical working temperature can reduce cracking or chipping of the zinc. Furthermore, it would have been obvious to one of ordinary skill in the art to use mechanical working method

of extrusion and deep drawing on the Batey/Hikata combination because such a process is less expensive than other conventional methods.

Regarding claim 2, Batey et al. disclose that the amount of bismuth present may be 500 ppm, which corresponds to a bismuth concentration of approximately 0.13% by weight (calculation assumes the balance is mostly zinc) (pg. 12 lines 15-20). Batey et al. discloses that zinc is the main component of the alloy and that lead is not an additive (pg. 12 lines 10-20).

Regarding claim 3, Batey et al. disclose that other additive metals such as magnesium may be added and that additive metals may have a concentration of up to 500 ppm, which corresponds to approximately 0.02% by weight magnesium (pg. 11 lines 21-31).

Response to Arguments

Applicant's arguments with respect to claims 1-3 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jacob Marks whose telephone number is (571)270-7873. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ula Ruddock can be reached on 571-272-1481. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jacob Marks/

/Ula C Ruddock/
Supervisory Patent Examiner, Art Unit 1729